HAND SET MOUNTINGS
A, B, C, D, E AND G TYPES
TESTS AND ADJUSTMENTS

1. GENERAL

1.01 This section outlines the requirements and adjusting procedures for the maintenance of A1, A2, A3, B1, B2, B3, B6, C1, D1, D2, D3, D5, D6, D8, E4, E5, G1, G2 and G3 types of hand set mountings.

1.02 This section is reissued to convert it to letter size and to incorporate material from the addendum in its proper location. In the process of this conversion, marginal arrows have been omitted

2. CONTACTS AND CONTACT SPRINGS (Except 537 Type Key)

2.01 **Cleaning of Contacts:** Contacts shall be clean:

(a) To clean burnish with No. 265B tool. In the case of mountings having crossbar contacts, apply the burnishing tool at an angle of approximately 45° with the axis of the springs, in the same plane as the springs.

2.02 **Contact Alignment:** Contacts shall line up so that in case of mountings having point and disc contacts the contact point falls wholly within the circumference of the opposing contact disc, and in mountings having crossbar contacts the width of the contact surface of each contact falls wholly within the length of the contact surface of its opposing contact bar. Each of those requirements applies throughout the entire range of operation in which the contacts are normally made.

(a) If the contact springs do not meet the requirement loosen the spring assembly with a 3-1/2" cabinet screwdriver and shift the springs until the requirement is met. In case of mountings having crossbar contacts the contact bar which is parallel to the axis of the spring should be as near as practicable to the center of its opposing contact bar. Take precautions to see that the bushings go through the holes and then tighten screws securely.

2.03 **Contact Margins:** On A, B, D and E-type mountings, when the plunger is slowly released from its fully depressed position, no make contacts shall make and no break contacts shall break until the plunger has reached a point at least 1/16" above the position it takes with the hand set on the mounting. Gauge by eye.

2.04 **Clearance Between Switchhook Studs and Springs:** When the switchhook of G-type mountings is in its extreme upward position, the operating springs shall not touch the operating studs of the switchhook.

2.05 **Contact Operation:** Contacts shall make or break in the sequences shown in the figures in the sections covering connections for the respective hand telephone sets. In the case of mountings having twin contacts, both contacts on the same spring shall make with their respective opposing contacts at approximately the same time.

2.06 **Contact Follow:** All contact springs including those which make contact when the hand set is on the mounting shall have a perceptible follow.

2.07 **Contact Separation:** The separation between all mating contacts shall be not less than .01". Gauge by eye.

2.08 **Adjustments for Contact Follow, Contact Separation, Contact Sequence, Contact Margins:** If the requirements are not met adjust the contact springs, as follows: In the case of the long springs apply the No. 466A tool and while holding the tool in a direction tending either to increase or decrease the tension of the spring, as required, move the tool up and down the spring, bowing the spring slightly. Care should be taken not to injure the contacts in doing this. In the case of the short springs apply the tool to the spring close to the point where it leaves the clamping plate and insulators, giving a slight bend as required. When adjusting contact springs take care not to kink them. Kinked springs should not be straightened unless the kink interferes with the proper adjustment because this tends to weaken the spring and shorten its life. After making any spring adjustments check all requirements

3. HAND SET MOUNTING PLUNGER OR SWITCHHOOK

Requirements

3.01 The plunger or switchhook shall move freely without binding or squeaking throughout the entire travel.

(a) For adjustment see 3.04, 3.05 and 3.06.

3.02 When the hand set is slowly lifted from the mounting, the plunger or switchhook shall move upward and come to a positive stop.

(a) For adjustment see 3.04, 3.05 and 3.06.

3.03 When the hand set is slowly lowered into place on the mounting it shall cause the plunger to move downward until the handle of the hand set rests on the supports. In the case of the hanging type mounting the switchhook shall move downward and come to a positive stop.

Adjustments

3.04 **Plungers:** If plunger fails to operate properly it is probably due to dirt or a gummy substance forming between plunger and its bearing. Remove plunger screw, plunger bracket, or operating details, plunger and helical spring and then clean plunger stem with KS-2423 cloth. Replace helical spring on plunger stem and then place plunger so that nickel silver guides on the plunger cross member are in the following positions:

(a) At the right hand side viewed from the front of hand set mounting if a D or E type hand set mounting.

(b) At the rear of hand set mounting if an A or B type hand set mounting.

3.05 When replacing plunger brackets make sure that phenol fibre washer is first placed on the shaft and that split or lock washer is placed under screw. If plunger does not operate properly, replace hand set mounting. If plunger fails to operate properly when hand set is placed in cradle of hand set mounting, it is probably due to excessive tension of the long contact springs. If such is the case, reduce the excessive tension of such springs as required, by applying the No. 466A tool and adjusting in the manner described in 2.07. Check other spring adjustments.

3.06 **Switchhook:** If the switchhook binds due to its being bent, replace it. If the switchhook binds due to the pin being bent or rusty, replace the pin. If the switchhook squeaks, remove pin and clean with KS-2423 cloth and in case of G type mounting clean also the hard rubber switchhook stud or studs which operate the contact springs. If one of the switchhook stops is broken replace the switchhook. If switchhook still does not operate properly it may be due to excessive tension or not sufficient tension of the long contact springs in the case of the C type mounting, or to incorrect tension of the helical spring in the case of the G type mounting. Adjust the springs in case of C type mounting, replace helical spring if necessary in case of G type mounting, and then check all spring requirements.

4. 537 TYPE KEY

Key Plungers

4.01 Key plungers shall work freely in their bearings and when released shall return to their normal position with a snap. Locking plungers shall lock reliably and when any one of them is operated to its locked position it shall release any other locked plunger. To adjust proceed as follows:

(a) If the key plunger binds in the sub-base shift the key slightly in its mounting. To do this remove the hand set mounting base and loosen the four screws which

mount the key to the sub-base and shift the key until no bind occurs.

537 TYPE KEY

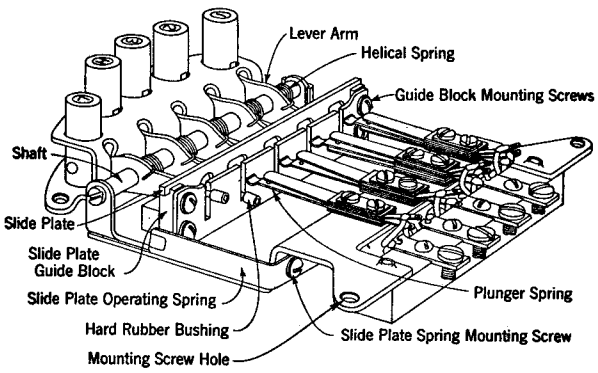

Fig. 1

(b) If the plunger still binds, it is probably due to an accumulation of dirt between the plunger and the key frame. Remove the key mounting screws and wipe off the plunger with a clean, dry KS-2423 cloth and reassemble the hand set mounting.

(c) If the plunger fails to release from its locked position when another locking plunger is depressed, it may be due to insufficient travel of the slide plate. This condition is generally due to foreign material between the slide plate and the slide plate guide block and may generally be remedied by removing the foreign material.

(d) If the plunger fails to release with a snap when any other locking plunger is depressed, it is probably due to a broken or distorted helical spring. If this is the case, replace the key.

(e) If the plunger fails to lock in its operated position, it may be due to a weakened or damaged slide plate operating spring. Correct this condition as covered under 4.02 (d).

(f) If the lever arm binds in the slot in the bracket it is probably due to dirt or the lever arm being bent. Operate the key and while operated, place a few drops of C.P. carbon tetrachloride on the lever arm at the point where it passes through the slot. Operate and release the key a few times and then take a toothpick that has been dipped in C.P. carbon tetrachloride and remove whatever dirt may remain.

537 TYPE KEY

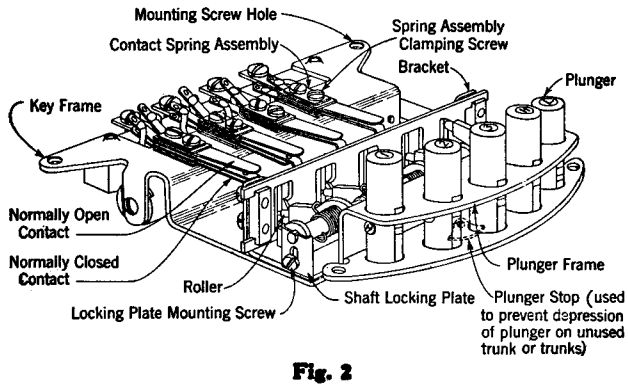

Fig. 2

(g) If the lever arm binds on the shaft it is probably due to dirt. Place a few drops of C.P. carbon tetrachloride on the shaft at the point where the shaft passes through the lever arm and then operate and release the key a few times. Wipe off the shaft with a clean dry cloth. Repeat this operation until all dirt has been removed.

(h) If it binds due to the lever arm being bent, replace the key.

Key Levers and Slide Plate

4.02 Lever arms and slide plate shall move freely in their bearings. Lever arms shall pivot freely on the shaft. To adjust proceed as follows:

(a) To determine whether or not the slide plate binds in its bearings, hold the slide plate operating spring away from the slide plate. Move the slide plate back and forth a number of times. If it does not move freely, it probably is due to an accumulation of dirt between the slide plate and slide plate guide block. Place a few drops of C.P. carbon tetrachloride between the slide plate guide block and the slide plate and operate the slide plate by hand a few times. Then take a toothpick that has been dipped in C.P. carbon tetrachloride and remove whatever dirt may remain. Wipe off the slide plate lugs.

(b) If the bind in the slide plate is not due to dirt, loosen the two screws that hold the slide plate guide block and bracket and shift the slide plate guide until the slide plate operates freely. Then retighten the bearing screws.

(c) If the bind in the slide plate is due to the slide plate being bent or broken, replace the key.

(d) If the tension of the slide plate operating spring is insufficient, resulting in failure to lock the plungers in the operated position, adjust the spring with the No. 466A tool close to the base.

(e) If the slide plate operating spring is broken, replace it. This spring is held in place by means of a slide plate spring mounting screw which is accessible when the base plate is removed from the sub-base.

537 Type Key Contact Springs—Requirements

4.03 **Contact Alignment:** Contacts shall line up so that the contact point falls wholly within the circumference of the opposing contact disc.

4.04 **Contact Separation:** The separation between contacts normally open or between contacts which are opened when the key is operated shall not be less than .016 inch (approximately 1/64"). Gauge by eye.

4.05 **Contact Sequence:** Normally closed contacts of an individual spring assembly shall break before the normally open contacts of the same spring assembly make by minimum .006 inch. Gauge by eye.

4.06 **Contact Follow:** All contact springs including those which make when the plunger is released shall have a perceptible follow.

4.07 **Spring Travel:** The travel of plunger springs at the point of contact with the rubber bushings on the levers shall be maximum 1/8 inch between the unoperated and operated positions in the case of locking plungers, and maximum 3/16 inch between unoperated and the extreme downward position in the case of non-locking plungers. Gauge by eye.

537 Type Key Contact Springs—Adjustments

4.08 Adjust in accordance with 2.02 (a) and 2.07 except that all spring adjustments should be made with the No. 466A tool applied at the base of the spring close to the clamping plates and insulators. Clean in accordance with 2.01 (a).

5. FRICTION PADS

5.01 KS-8035 friction pads are intended for use on the bases of B, D and E type hand set mountings to prevent slipping during dialing.

5.02 These pads should be attached to the dial hand set mounting wherever it appears that the mounting turns when the subscriber uses the dial.

5.03 The approximate locations on the hand set mounting base at which the friction pads per KS-8035 shall be attached are indicated in Figs. 3, 4 and 5.

5.04 The friction pads will not adhere to damp or oily surfaces. Before placing the pads in position on the base, clean surface of base with a clean dry cloth. If there is an accumulation of oily or gritty deposits on the base, remove these with an eraser or emery paper or brush off with a stiff brush. If used carefully, a file or other edged tool may serve to remove the deposits. Scrape surface lightly with the edge of the tool so as not to injure the base covering.

5.05 Peel off the protective covering from the adhesive on the pad and then press the pad firmly into place on the base with the thumb or heel of the hand

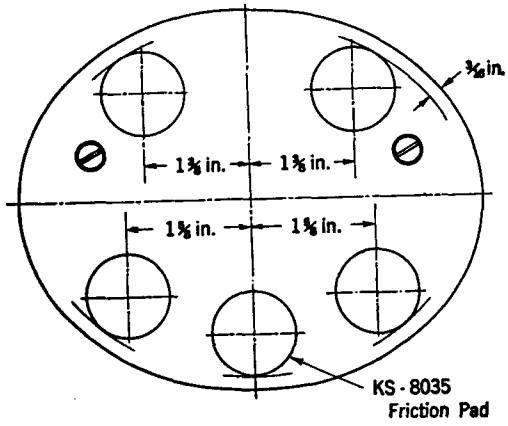

Fig. 3—D Type Hand Set Mounting.

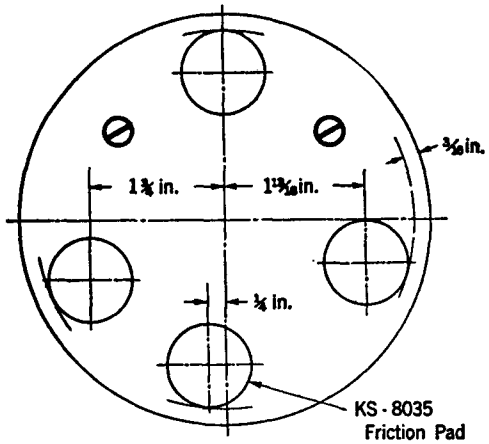

Fig. 4—B Type Hand Set Mounting.

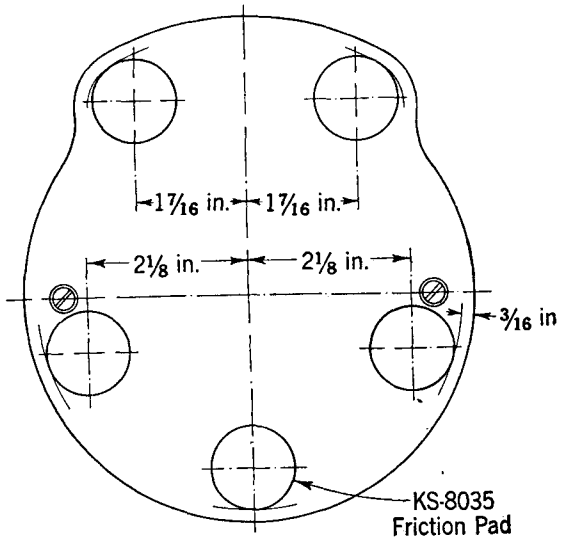

Fig. 5—E Type Hand Set Mounting.

6. CONTACT SPRING COVER

6.01 The cover, designated KS-8253 and shown in Fig. 6 in position on the double make contact springs of the D1 Hand Set Mounting, consists of two channel shaped parts made of cellulose acetate. This cover may be applied on any of the spring pileups on B or D-type mountings. Before applying, contacts to be covered should be cleaned by blowing the dust out with Chip Syringe No. 23 (with valve) or by brushing the contacts with DHS 12463 Brush or the equivalent and then immediately burnishing the contacts with the No. 265 B Tool. If mounting is equipped with a filter unit, loosen the filter bracket mounting screws and temporarily swing filter toward front of the mounting.

6.02 To assemble, place the inner cover in position on the long contact spring with the open side toward the center of the hand set mounting and the narrow slit in the end of cover engaged by the long contact spring about 3/8" from the end of the spring. Then assemble the outer cover in position with its open side away from the center of the hand set mounting, taking care to see that the lower flange (as shown in Fig. 7), is below the lower flange of the inner cover. This may be done by first inserting one corner of the outer cover in position as shown in Fig. 7, then pressing it into position so that its upper flange is above the upper flange of the inner cover.

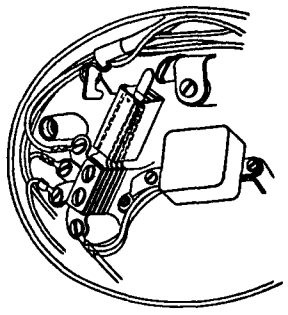

Fig. 6.

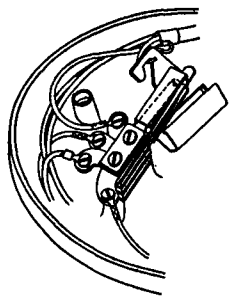

Fig. 7.